1998 *Legislative Summary*

Pesticide Incident Reporting and Tracking Review Panel

Report on 1997 Incident Data

Environmental Health Programs

December *1998*

Legislative Summary

Pesticide Incident Reporting and Tracking (PIRT) Review Panel

December *1998*

A report prepared by the **Department of Health** to the legislature as required by Chapter 380, Laws of 1989, and RCW 70.104.

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Introduction

The Pesticide Incident Reporting and Tracking Review Panel has summarized the data from the 1997 pesticide incidents into a 1998 legislative summary. The ninth annual detailed report for 1998 will be available in the spring of 1999. The PIRT Panel consists of the Washington State Departments of Agriculture (WSDA), Ecology, Health (DOH), Labor and Industries (L&I), Natural Resources (DNR), Fish and Wildlife (WDFW), as well as the University of Washington (UW), Washington State University (WSU), Washington Poison Center (WPC), a practicing toxicologist, and a member of the public.

The PIRT Panel is directed by statute (RCW 70:104.090) and has among its responsibilities the identification of inadequacies in pesticide regulations that result in insufficient protection of public health and also the approval of an annual report summarizing pesticide incidents. This report evaluates 1997 pesticide incident data from four state agencies: Agriculture, Ecology, Health, and Labor and Industries, and the Washington Poison Center. It also describes PIRT 1998 panel activities.

Contents

Actions Taken on the 1997 Recommendations of the PIRT Review Panel

- Obtain environmental incident data from natural resource agencies for inclusion in the PIRT Annual Report.

  This report includes 1997 ecological incident data.

- Review PIRT's statutory responsibilities to determine if activities and membership reflect current concerns and mandates.

  During 1998, PIRT reviewed and revised it's mission and goals. At the September meeting the panel agreed to begin the process of seeking the Governor's appointment of two panel members; a practicing toxicologist and a member of the public. The terms of the members currently in these positions expired in 1997.

- Enhance coordination with PIRT and the Pacific Northwest Agricultural Safety & Health Ctr. at the University of Washington.

  At the June meeting, Matt Keifer, MD, Pacific Northwest Agricultural Safety and Health Center (Center), gave an overview of the many projects currently underway at the Center. Opportunities for information exchange and coordination were suggested. The Center will try to keep the panel informed of their activities.

- Complete the PIRT Legislative Summary so it is available during the legislative session.

  The 1998 PIRT Legislative Summary is scheduled to be distributed prior to the 1999 legislative session.

- Identify additional stakeholders who would benefit from information contained in the PIRT Annual Report.

  The 1997 PIRT Annual Report was published in June 1998. It was publicized with a news releases and made publicly available through the DOH Web Page.

- WSDA provide additional training and education to Wood Destroying Organisms (WDO) inspectors.

  In 1998, WSDA addressed the need for more training of WDOs with training sessions and planned workshops. In November, WSDA offered a one day seminar to the WDO industry. The 1997 program was attended by 250 to 300 industry representatives. Other WSDA planned training activities include: A WSPCA, WSDA and WSU day long workshop in January; participation in the WSU recertification program; presentation of workshops on pest inspections; and collaboration with the Washington State Housing Finance Commission.

- DOH target educational efforts for safe use of pesticides in urban/suburban settings.

  DOH is collaborating with WSU Cooperative Extension Service to develop educational materials for pesticide users in urban and suburban settings.

- DOH continue to monitor and evaluate reported incidents occurring in greenhouses and nurseries.

  In 1998, DOH reviewed it's incident data base from 1992 through 1997 for cases involving greenhouses and nurseries. Study findings were presented at the October PIRT meeting. L&I also reported preliminary findings of inspections done in greenhouses and nurseries.

- L&I identify reasons for the increase of rejected claims resulting from pesticide exposure.

  In 1998, L&I conducted a review of claims data to try to determine reasons for this apparent trend.

1998 Recommendations of the PIRT Review Panel

- Further develop the PIRT Panel goals and tasks.
  The panel will update their goals and tasks to reflect current issues. The revised goals and tasks should include the general public's concerns related to pesticide exposure.

- Prepare a five year (1993 through 1997) analysis of PIRT incident data.
  The panel will evaluate incident data submitted by WSDA, DOH and L&I from 1993 through 1997 to identify trends for intervention strategies.

- Recommend L&I conduct a database search for additional pesticide claims based on ICD-9 (international Classification of Diseases 9th Revision) diagnoses and Z-16 (USA Standard Injury) codes.
  Currently pesticide claims are identified through computer scanning for specific words: words that end in "cide", spray and/or fumigate. In order to verify that this system detects all pesticide related claims, L&I will search claims by ICD-9 codes (assigned at the hospital) and by Z-16 codes (determined by L&I) pertaining to pesticide illness.

- Review PIRT data for pesticide active ingredients involved in incidents.
  The review will provide information on specific formulations of products involved in incidents and complaints. This will enhance WSDA's efforts to track pesticide active ingredients involved in incidents.

- Review a sample of pesticide labels involved in incidents to determine if instructions were adequate to have prevented the accident (misuse not withstanding).
  The intent of this review is to provide the EPA with information based on actual incidents for future recommendation for label change.

- Establish networking capability with other states having panels with similar missions or with similar reporting systems.
  The panel would like to exchange information with other states and learn from their experiences.

- Review current pesticide monitoring efforts in urban surface waters.
  The panel would like to know what pesticide monitoring activities are currently underway and what pesticides are being monitored.

- Define PIRT's role in reducing the risk of pesticide exposure in the urban environment.
  The panel will begin by reviewing agency urban incident data to look for common routes and causes of pesticide exposure.

Key Findings

- Approximately half of the DOH cases were determined to be pesticide related. Similarly with WSDA, about half of the complaints resulted in some form of corrective action, and L&I accepted 52 percent of the pesticide claims.

- Agricultural tree fruit workers are the occupational group most frequently involved in pesticide incidents.

- The data continue to show that incidents can be reduced by:

  - Careful preparation before making pesticide applications.

    WSDA# 15C97 and DOH# 970117 Three children were waiting for a school bus when they were drifted on by an aerial applicator. Clothing samples were positive for residues. The children were mildly symptomatic and, following washing, recovered.

  - Using better health and safety practices.

    DOH# 970274 A fruit worker developed eye irritation after he accidentally wiped his eye with a shirt sleeve contaminated with insecticide residue from the previous day.

  - Wearing eye and face protection, proper gloves, using decontamination water and changing clothes when garments are contaminated with pesticide.

- While agencies received fewer pesticide complaints in 1997 than in previous years, similar patterns of distribution and exposure were observed. Public concern as expressed by the number of calls received by the Washington Poison Center remain high (3,227 in 1997).

Department of Agriculture

WSDA investigated all reported complaints involving pesticide use, sales, distribution, pesticide licensing, and building structure inspections for Wood Destroying Organisms. During 1997, WSDA investigated 204 complaints (Table 1); 110 (54%) resulted in violation of state regulations. One hundred fifty-seven involved pesticides and 47 were not related to pesticide applications.

Table 1 **WSDA Complaints & Violations**

Year	Total Complaints	Violations
1992	558	264 47%
1993	400	166 42%
1994	383	138 36%
1995	259	87 34%
1996	251	104 41%
1997	204	110 54%

In 1997, 57 percent of the complaints were reported to WSDA from April through June. Most complaints (88%) were responded to immediately or within 24 hours. WSDA is required to respond to cases of human exposure within 24 hours of receipt. Other cases are responded to as soon as possible. However, in 1997, WSDA received 65 percent of complaints four or more days after the incident had occurred. For 21 incidents the event was reported more than six months after its reported occurrence.

This long delay in reporting makes it difficult for WSDA to obtain environmental samples and testimony.

Location

One hundred nineteen (58%) of the 1997 complaints occurred in eastern Washington; 85 (42%) were from western Washington. The following counties reported 10 or more complaints: Grant 24, Yakima 22, King 20, Spokane 18, Pierce 13, and Benton 10.

Type of Complaint

Table 2 shows the type of activity associated with complaints resulting in violation from 1992 to 1997.

When violations were evaluated by type of license involved, commercial applicators accounted for 57 of the 110 violations, followed by private applicators 15, public operators 6, unlicensed 22, and other six. This reflects an increase in violations by commercial applicators and a decrease in violations by individual users holding private applicator licenses.

Table 2 **WSDA Violations by Type of Activity**

Activity	1992	1993	1994	1995	1996	1997
Agricultural	158	75	46	26	29	40
Commercial/Industrial	32	60	44	24	27	22
Pest Control Operator/Wood Destroying Organism	❊	❊	28	28	20	24
Residential (noncommercial)	9	15	12	3	9	8
Right-of-Way	✦	✦	✦	✦	3	10
Other (licenses, records, etc)	65	16	8	6	16	6
Total Violations	**264**	**166**	**138**	**87**	**104**	**110**

❊ Prior to 1994, PCO cases were classified as other, and in 1996, Wood Destroying Organisms were included with Pest Control Operators.

✦ Prior to 1996, right-of-ways were included with commercial/industrial.

Nature of Pesticide Complaint

Table 3 shows the nature of initial complaints reported in 1997.

Table 3 **WSDA 1997 Type of Complaint**

Drift	50
Human Exposure	42
WDO Inspection	23
Direct	20
Animal/Bird/Bee Kill	18
License/Records/Sales	16
Misuse	12
Water Contamination	6
Deliberate	5
Other	12
Total	**204**

For the second year (1997), the majority (78%) of all WSDA complaints were determined to have a low severity rating scale of two or less. A rating of two means: residues may have been found but no human or animal symptoms resulted or could be verified; multiple minor violations may have been identified; off label use, worker protection violations; plants with temporary or superficial damage; PCO/WDO faulty inspections; or DOH classified the complaint as "possible".

Although there may have been violations associated with these investigations, individuals generally were given Notices of Correction or Verbal Warnings rather than fines or suspended licenses.

In 1997, herbicides were involved in 86 complaints and insecticides in 77 complaints. The following pesticide active ingredients were involved with ten or more separate complaints: 2,4-D (30), glyphosate (14), chlorpyriphos (12), dicamba (11), and azinphos-methyl (10).

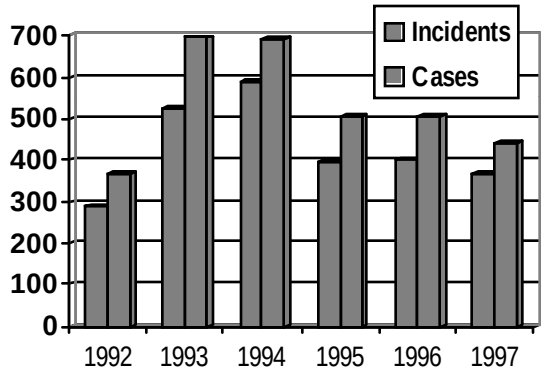
For several years WSDA has tracked the application method used in complaints. In 1997, consistent with prior years, the majority of pesticide complaints involved ground applications (79%).

In 1997, WSDA shared information on 80 complaints with other local, state or federal agencies.

Department of Health

In 1997, DOH investigated 365 reported incidents of suspected acute pesticide related illness involving 441 individuals (cases). Figure 1 shows a comparison of data from 1992 to 1997.

Figure 1 **DOH Investigations 1992-1997**



Reports of suspected pesticide illness were received from L & I Claims 44%, WPC 37%, WSDA 7%, individuals 6%, Health Care Providers 4%, and others 2%. DOH responded within 48 hours to reported illnesses 95 percent of the time. Most (66 %) of reported pesticide exposures occurred between April and September.

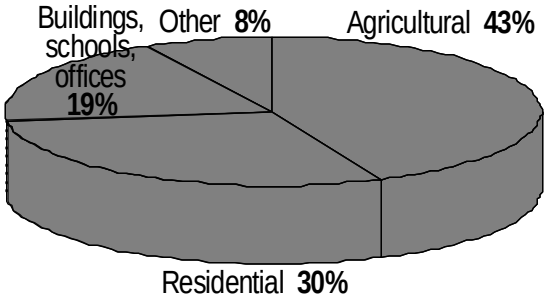
Classification of Investigated Cases

DOH investigators interviewed individuals and witnesses (when appropriate), obtained pesticide application and relevant medical records, and conducted field visits. The case is classified as to how likely the symptoms were related to the exposure. DOH classified 214 (49%) cases investigated to be definitely, probably, or possibly related to pesticide exposure.

Nature of Pesticide Exposure

Of the 214 cases related to pesticide exposure, 113 were associated with nonagricultural applications. (Figure 2) Ninety-three cases involved agricultural pesticide applications. Eight cases did not involve an application (e.g., inadvertent ingestion by children, exposures at pesticide retail and wholesale sites and intentional ingestion).

Figure 2 **1997 DOH Cases by Nature of Pesticide Exposure**



Severity

In 1995, DOH began coding cases according to the severity of health outcome. For the third year (1997), the majority (98%) of investigated cases were considered to have mild or moderate medical outcomes, had no symptoms or were unrelated to pesticide exposure. Only two percent of cases investigated had outcomes considered severe. Following investigation, five of these cases were determined not to be pesticide related. Three pesticide cases were considered to have severe health outcomes. One resulted from intentional pesticide ingestion and the remaining two cases are as described:

DOH# 970136 Two farmworkers were seen in the emergency room. One worker was treated with atropine and admitted overnight to the hospital for possible OP poisoning. They had walked into a field sprayed (myclobutanil and azinphos-methyl) before the interval of restricted re-entry (REI) had expired. Symptoms included shortness of breath, nausea, dizziness, chest tightness and shaking.

DOH# 970174 A crop advisor developed dizziness, weakness, anxiety, headache, eye and nose irritation after he splashed approximately 6 ounces of pesticide (methamidophos, chlorothalonil and copper hydroxide) onto himself when mixing cleaning agents, including ammonia and chlorine bleach.

Occupational Cases of Pesticide Related Illness

Of the 441 total cases, 289 (66%) involved an alleged pesticide exposure on-the-job. Of these, 144 cases were classified as definite, probable or possible. Seventy nine involved

agricultural workers and 65 were from other occupations. These data are consistent with prior years.

The annual number of pesticide related agricultural cases has remained steady at around 80 per year since 1994. Among agricultural workers, those who directly handled pesticides (e.g., mixers, loaders, applicators) were at highest risk for direct exposure, and accounted for 40 (51%) reported illnesses in 1997. The remaining 39 (49%) occupational agricultural cases were thinners, irrigators, and other agricultural workers exposed either to drift or to residues on foliage and equipment.

Sixty-five percent of the pesticide related agricultural occupational cases occurred in the fruit tree industry, especially apples. Nineteen percent of cases involved field crops. The remaining cases (16%) came from categories such as nurseries/greenhouse, berries, vegetables, and Christmas trees.

Incidents Involving Children

Sixty-one individuals 18 years of age and less accounted for 14 percent of the 441 reported cases. The 61 cases involved 44 different incidents: 35 were nonagricultural and nine occurred in agriculture. The 61 childhood cases involved the following types of pesticide: (some cases involved more than one type) 38 insecticide/acaricide, 13 herbicides, 5 fungicide (all occurred in agriculture), 3 repellents, 1 rodenticide and 7 others.

Twenty-four of the 61 cases were related to pesticides. (Table 4) Thirteen children were under the age of six: six were ages 6-10, and five were ages 11-18. The severity of the 24 cases were 21 mild (88%), and three moderate (13%). Thirteen of the 61 childhood cases occurred on the job, and seven of these occurred in agriculture.

Table 4 **1997 Relationship to Exposure for Children <19 Years of Age**

Classification	**Incidents**	
Definite	8	13%
Probable	7	11%
Possible	9	15%
Unlikely	9	15%
Unknown	11	18%
Unrelated	4	7%
Asymptomatic	13	21%
Total	**61**	**100%**

In 1997, eleven childhood cases involved insecticidal lice shampoo. These included: accidental ingestion, overuse of the product, and the shampoo getting in the child's eyes.

Department of Labor and Industries

L&I responds to pesticide related worker exposure through two divisions: the Washington Industrial Safety and Health Act (WISHA) Services Division, and the Insurance Services Division, Claims Administration Program. In 1997, L&I WISHA Services Division conducted 20 pesticide related investigations with 18 resulting in citations being issued against the employer. The Insurance Services Division, Claims Administration Program received 235 pesticide related claims.

In 1997, WISHA staff performed 20 pesticide related investigations; 11 in eastern Washington and 9 in western Washington. These investigations occurred in both agricultural and nonagricultural environments. Twelve were employee or employee representative initiated complaints. Five investigations were the result of referrals from within the agency, or from other state agencies, two were planned inspections identified through the L&I targeting list and one was a fatality investigation (death from heart disease.) Two of these incidents were reported in 1996, investigated in 1997, and were not included in the 1996 data analysis.

Violations were reported in 18 of the 20 investigations. The following viola-

tions were most frequently cited: inadequate hazard communication program; inadequate respirator program or fit testing; inadequate eyewash facility; inadequate Personal Protective Equipment (PPE); no accident prevention program; no material safety data sheets; lack of hazardous chemical labeling; no first aid training, kits, or cards; and, inadequate record keeping.

L&I Claims Insurance Services Division, Claims Administration Program

The Insurance Services Division, Claims Administration Program, processes worker claims initiated by on-the-job injuries and illnesses. L&I, Insurance Services Division, refers pesticide claims to DOH for investigation. In 1997, 235 claims were investigated by DOH because of possible health concerns. This compares with 222 investigated by DOH in 1996.

In 1997, 167 (71%) claimants were exposed while working in agriculture and 68 (29%) in nonagriculture. Fifty-four percent (126) of the claims involved workers in the fruit industry. Field crops follow with 11 percent (26) of claims.

In 1997, the majority of all initial medical visits were paid, and the claims were determined in accordance with the following definitions:

- **Medical Only/Non-Compensable Claim:** a worker experiences symptoms that he/she believes occurred from exposure on-the-job and seeks medical evaluation. The physician finds the symptoms related to the exposure and there is objective evidence of injury. Therefore, the claim is allowed and medical evaluation and any follow-up medical care/treatment is paid. The employee misses less than three days of work. These lost work days are not reimbursed to the employee.

- **Time Loss/Compensable Claim:** A worker has an allowable claim and misses more than three days of work immediately following an exposure on the job. The worker is paid a portion of salary while unable to work. All related medical costs are covered.

- **Rejected Claims:** Initial diagnostic evaluation medical costs are covered but the claim is rejected because objective evidence is lacking to relate the symptoms to the workplace exposure. Many claims are rejected because the symptoms have resolved by the time treatment is obtained; there is no objective evidence of injury; or, exposure cannot be confirmed or documented. A rejected status prevents the worker from reopening a claim based on original symptoms.

- **Pending:** Additional information is being collected on the claim before a determination can be made.

- **Kept On Salary:** The employer elects to pay the claimant's salary instead of L&I paying time loss payments while the employee is recovering from an injury or illness.

Table 5 compares claim status from 1992 to 1997.

Table 5 **Status of Claims Related to Pesticides**

Claim Type	1992		1993		1994		1995		1996		1997	
Medical only/ noncompensable	179	78%	223	77%	138	57%	134	55%	97	44%	108	46%
Time loss/ compensable	25	11%	41	14%	12	5%	9	4%	8	4%	14	6%
Rejected	23	10%	16	6%	66	27%	98	40%	111	50%	101	43%
Pending	2	1%	10	3%	25	10%	3	1%	2	1%	12	5%
Kept on salary	—	—	—	—	—	—	1	—	1	—	—	—
Unknown	—	—	—	—	—	—	—	—	3	1%	—	—
Total	**229**		**290**		**241**		**245**		**222**		**235**	

Department of Ecology

The Department of Ecology (Ecology) investigates complaints involving threats to air, water or soil. In 1997, Ecology reported 49 pesticide related complaints. (These do not include pesticide-contaminated sites involved in evaluation and cleanup.) Complaints were reported from 20 counties. Thirty complaints came from eastern Washington and 19 from western Washington. The complaints were received from a variety of sources, including private citizens 27, other state agencies 12, local health or fire departments eight, and federal agencies two. Table 6 shows the common types of pesticide related complaints reported to Ecology.

Table 6 **1997 Type of Pesticide Complaint**		
10	20%	Pesticide threatening ground or surface water
10	20%	Pesticide disposal or waste concern
8	16%	Spills
3	6%	Unsafe pesticide storage
18	37%	Other (i.e., fire, fumigation)

All complaints involved threats to people or the environment. In 44 (90%) incidents, Ecology responded within 24 hours. Forty-eight of the 49 complaints were resolved and closed in 1997. Twenty-four complaints (49%) occurred in the agricultural environment, 16 (33%) in the commercial/industrial environment, and nine (18%) resulted from residential activities.

After the initial response, 19 complaints were referred to other state or local agencies. The 49 complaints resulted in the following resolutions: 18 caused no ecological impact, 14 involved some form of clean up or removal of materials, 13 complaints were not substantiated, two involved human or animal health concerns, one is an on-going investigation by the Ecology Toxics Cleanup Program and one resulted in a Notice of Correction.

Washington Poison Center

In 1997, the Washington Poison Center (WPC) received 134,213 "poison" calls. Of these, 3,227 were pesticide related and account for two percent of total calls received statewide by WPC.

Reports of WPC calls involving pesticides are forwarded to DOH if the individual is referred to a health care provider, or if a health care provider sought case management assistance. One hundred fifty-six referrals from WPC were investigated by DOH. DOH classified these cases as: 16 definite, 40 probable, 39 possible, 16 unlikely, 9 unrelated, 21 unknown, and 15 asymptomatic.

Table 7 illustrates WPC calls by pesticide type for the different age groups. Insecticides continued to be the type of pesticide most frequently involved in calls to WPC (65%).

Table 7 **1997 WPC Calls by Pesticide Type & Age**				
Pesticide	**<6 Yrs**	**6-19 Yrs**	**>19 Yrs**	**Total Exposure**
Fungicides	20	9	59	88
Herbicides	118	70	294	482
Insecticides	827	299	977	2103
Moth repellents	24	9	44	77
Rodenticides	373	31	73	477
Total	**1362**	**418**	**1447**	**3227**